Relion 4880

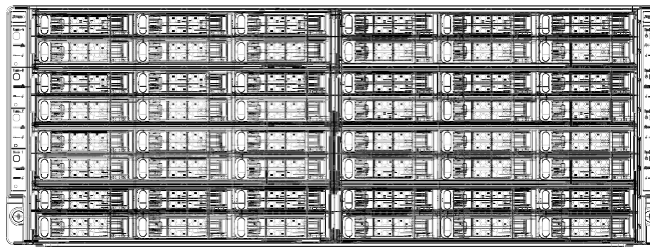
High Density server for HPC

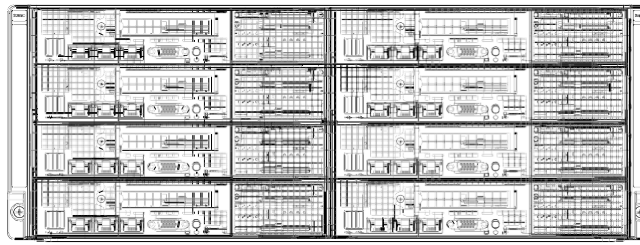
Technical Guide
Rev. 1.0

PENGUIN COMPUTING

SUPER®

SCF418 Chassis Series





SCF418BC-R1K62BP SCF418IF-R1K62BP
SCF418IL-R1K62BP

USER'S MANUAL

1.0

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WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SCF418 4U chassis. Installation and maintenance should be performed by experienced technicians only.

The FatTwin™ is the latest addition to Supermicro's evolving line of Twin Architecture SuperServer® solutions. The 4U FatTwin greatly expands computer and storage capacities beyond Supermicro's existing 2U Twin2™ and 1U Twin™ SuperServer® systems to achieve increased performance with lower power consumption. By virtue of its shared components, the FatTwin improves cost-effectiveness and reliability, while its modular architecture makes it flexible to configure and easy to maintain.

The FatTwin is available in high-density hot-plug eight node configurations with a choice of memory capacities, hard disk drives, power supplies, front or rear I/O, PCI and networking options and more. Its high-efficiency, highly effective shared cooling architecture allows the FatTwin to operate in high-temperature, free-air cooled environments up to 47°C, providing considerable cost savings and improved TCO. Versatile configurations allow the FatTwin to be optimized for many different environments including Data Center, Cloud Computing, and HPC; Engineering, Research, and GPU projects; File and Storage Server deployments; and General Server and Enterprise Server applications.

This document lists compatible parts available when this document was published. Always refer to the our web site for updates on supported parts and configurations

Manual Organization

Chapter 1 Introduction

Chapter 1 describes components included with this chassis, and the main features of the SCF418 chassis. This chapter also includes contact information.

Chapter 2 System Safety

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

Chapter 3 Chassis Components

Refer here for details on this chassis model including the fans, bays, airflow shields, and other components.

Chapter 4 System Interface

See this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5 Chassis Setup and Maintenance

Follow the procedures given in this chapter when installing or removing components, or reconfiguring your chassis.

Chapter 6 Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

Appendices

The appendices list compatible cables, power supply specifications, and compatible backplanes. Not all compatible backplanes are listed. Refer to our Web site for the latest compatible backplane information.

Appendix A Power Supply Specifications

Appendix B SAS-F418-B6 Backplane Specifications

Appendix C SAS-F418-B2R Backplane Specifications

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Appendix B BPN-SAS-F418-B6 Backplane Specifications

Appendix C BPN-SAS-F418B2R Backplane Specifications

Chapter 1

Introduction

1 Overview

Supermicro's SCF418 "Fat Twin" chassis is designed to optimize performance per Watt and per dollar with up to eight independent hot-pluggable DP computing nodes, efficiently organized into a 4U form factor. Each node provides hot-swappable and/ or fixed hard drives for RAID 5 data protection, and is contained in a convenient module to facilitate easy system upgrades, installation and maintenance. See be- low for the hard drive configuration of your particular SCF418 chassis model. The SCF418 chassis is equipped with high-efficiency optional 1 + 1 Platinum Level redundant power supplies (95%), on each side, for a total of four power supplies, with a power-efficient server board and optimized cooling subsystems. The Fat Twin is the best choice for HPC, datacenter and cost-effective blade-type applications.

2 Shipping List

Part Numbers

Please visit the Supermicro web site for the latest shipping lists and part numbers for your particular chassis model at http://www.supermicro.com/products/nfo/Fat-Twin.cfm

SCF418 Chassis

Model	CPU	Nodes	HDD	I/O Slots	Power Supply
SCF418BC-R1K62BP	DP/UP	8x	48x 2.5" SAS/ SATA (8x per node)	8x mirco LP total (1x micro LP per node) 8x LP total (1x LP per node)	4x 1620W
SCF418IF-R1K62BP	DP/UP	8x	16x fixed 3.5" SAS/SATA (2x per node)	16x LP total (2x LP per node)	4x 1620W
SCF418IL-R1K62BP	DP/UP	8x	16x fixed 3.5" SAS/SATA (2x per node)	8x LP total (1x LP per node)	4x 1620W

1-3 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

Asia-Pacific

Address:	Super Micro Computer, Inc.
	4F, No. 232-1, Liancheng Rd
	Chung-Ho Dist., New Taipei City 235
	Taiwan
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Web Site:	www.supermicro.com.tw

Technical Support:

Email:	support@supermicro.com.tw
Tel:	+886-(2)-8226-3990

1-4 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Chapter 2

Standardized Warning Statements for AC Systems

2-1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our web site at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition

Warning!

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義 この警告サインは危険を
意味します。
人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、
電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

הקהזא תורהצה ןונקת

היישעתה ינקת יפ לע תורהזא זה תואבה תורהצה ,הלבח ינפמ שמתשמה תא ריהזהל תנמ לע תירשפא תיזיפ.יהשלכ היעבב תולקתיה וא תולאש שיו הדימב ,הכימת תקלחמ סע רשק רוציל שי ורקימרפוס לש תינכט.סיביכרה תא רידגהל וא ץיקתהל סיאשר דבלב סיכמסומ סיאנכט .

ורקימרפוס יזראמב סיביכרה תרדגה וא תנקתה ינפל ואולמב חפסנה תא אורקל שי.

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions

Warning!

Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告 将此系统连接电源前,请先阅读安装
说明。

警告 將系統與電源連接前，請先閱讀安裝
說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

חתמ רוקמל תכרעמה רוביח ינפל הנקתה תוארוה תא אורקל שי.

ةقاطلل ردصملإ ماظنلاليصوتب بيكرتلا تاداشرإلا

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker

Warning!

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています

。保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告 此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电 流不大于250V,20A。

警告 此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電 流不大於250V,20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

ילמשח רצק תעינמל סינבמב תנקתומה הנגה לע דמתסמ הז רצומ.יכ אדוול שי
מ רתוי אל אוה ילמשחה רצקה ינפמ זגמה רישכמה-A 250 V, 20

فـا هتيبثتـتـيلا قريصقلارئودلا ه هيقلا ثادعم للع دمتعي جتنملا اذه
فلا
نمرقلأ سيل يقولا زاهجلاقيت نأ نم دكأت: 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 220V, 20A.

Power Disconnection Warning

Warning!

The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセス するには、
システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告 在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告 在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。 Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

!הרהזא
קפסהמ ילמשחה לבכ תא ריסהל שיו למשחה תורוקמ לכמ תכרעמה תא קתנל שי סיביכר תרסה וא תנקתה דרוצל זראמה לש ימינפה קלחל השיג ינפל.

دادما ةدحو نم ءزجلا كهس ةلازإ ردا صم عيج نم واطئتا مصف بجي
مدقلا
زاهجلا ئانسكمل وأ جيشن مكيهمن ةطانمنا ل لصنا

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation

Warning!

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告 只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告 只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

הרהזא !

.זיקתהל יאשר דבלב רמסומ תווצ,דויצה רובע תוריש תתל וא דויצה תא חילחהל

.ةمدخ وأ لادبتساو بيكزتل هيبردملاو هيلهؤملا هيفظدملل طقف حمسي نأ بجي

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

Restricted Area

Warning!

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域 このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告 此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和 钥匙或其它安全手段进出的场所。

警告 此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙 或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזהרה!
השיג תלבגה סהב שיש סירוזאב הדיחיה תא זיקתהל שי.תרזעב תנתינ השיגה
דבלב החטבא ילכ)חתפמ,דכו לוענמ ׳(.

ةروظحم قطانم ٍف اهبُكرتن ةحنا هذهصيخت مت .
،تصاخ ةادأ وانختسا للاخ نم طقف ةروظحمةٍ ًبَإ لصصنا نكمَ
املأملان يرخأتهُو ٌأ وأ حاتفموفق

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling

Warning!

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメー カーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従 って処分して下さい。

警告 电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更 换原有电池。请按制造商的说明处理废旧电池。

警告 電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有 電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה !

הרהזא !

הניקת אל דרדב הפלחוהו הדימב הללוסה לש עוציפ תנכס תמייק.ךילחהל שי תצלמומ זרצי תרבחמ מאותה גוסב הללוסה תא.

זרציה תוארוה יפל עצבל שי תושמושמה תוללוסה קוליס.

للغف ةحيحصريغ ةقيرطب ةيراطبلا لادبحسا ةلاحفي رلجقا نم رطخ كانه
ةيراطبلا
لادبحسا ةعنصملا ةمرشلا هب ثصوأ امم اهلداعي ام وأ
عنلا سفنب طقف ةعناصلا ةمرشلا تاميلعتل اقفو
ةلمعحسملا تايراطبلا نمصلخ

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies

Warning!

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置 このユニットは複数の電源装置が接続されている場合があります。 ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告 此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告 此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר ממספק אחד
דחא קפסמ רתוי סייק סא

אזהרה !
הרהזא !
קפס לש דחא רוביחמ רתוי שי הדחיל.זקורל תנמ לע סירוביחה לכ תא ריסהל שי הדיחיה תא.

ةقاطلا دادما تادحوب تلااصتا ةدع زاهجلا اذهل نوكي .
ىق ءابرهكلا نع ةدحولا لسلس تلااصتلاا ةفاك ةلازإ
بجي

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage

Warning!

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧 システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

警告 当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告 當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

ירוחאה לנפב חתמ

הרהזא !
תכרעמה לועפת ךמזב ירוחאה לנפב חתמ תנכס תמייק.דלהמב רהזיהל שי הדובעה.

ةحدللالع ةنجملا ةقاطلاو أيؤهكلاريلا هم زطخ كلهسلا اذه
ةمدخ نع ارذح ه ك لمعي ماظنلا نكي امدنع

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생합니다. 서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes

Warning!

Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠 機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告 设备安装必须符合本地与本国电气
法规。 警告 設備安裝必須符合本地與本
國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

וצראה למשחה יקוח סאשת

הרהזא !
סייצראהו סיימוקמה למשחה יקוחל תמאות תויהל תבייח דויצה תנקתה.

ةقلعتملا ةيدطدلاو ةيلحلا هيوا دقلل لثتمي نأ بجي ةيئابر هكلا
تادعملا بيكرت
ءابر هكلاب

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal

Warning!

Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告 本产品的废弃处理应根据所有国家的法律和规章进行。

警告 本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

אזהרה קוליס

הרהזא !
הנידמה יקוחו תויחנהל סאתהב תויהל בייח הז רצומ לש יפוס קוליס.

ةيندلا حئاللاو نيناقلاعلقو هعم لماعتلا يغني جتنملا اذه نمءلاصلخلا دنع

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Hot Swap Fan Warning

Warning!

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファン・ホットスワップの警告

シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他 物品太靠近风扇

警告 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他 物品太靠近風扇。

Warnung

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

הרהזא !
זראמהמ ררוואמה יקלח תא סיריסמ רשאכ ,סידבוע זיידע סיררוואמהו זכתי .שי
ררוואמה דותב סיחתפהמ סינוש הדובע ילכו תועבצאה תא חוטב קחרמל קיחרהל

ءاقبإ بجي مكيهنا هم ةحورمنا ةهتك ةنازإ دنعرودت لاست لا حوارمنا نأ
هكممنا هم
يغاربنا تاكفمو عبصلأ
ةحورمنا ةهتكف تاحتفنا هع اديعب ءيشلأ هم اهريغو.

경고!

새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter

Warning!

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告 安装此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器.使用其它线 材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材 料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告 安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器.使用其它線 材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材 料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

AC ימאתמ ם יילמשח

הרהזא !

רצומה תא סיניקתמ רשאכ,סילבכב שמתשהל שי ,סימאתמו סיקפס ACרשא דכ סשל וקפוסו ודעונ .וא הלקתל סורגל לוכי רחא סאתמ וא לבכ לכב שומיש ילמשח רצק .תוחיטב יקוחו למשח ירישכמב שומיש יקוח יפ לע ,רוסיא סייק ב סיכמסומה סילבכב שמתשהל- ULב וא - CSA)לש דוק סהילע עיפומ ראשכ UL/CSA(דבלב ורקימקרפוס ידי לע זיוצ אלש רחא ילמשח רצומ לכ רובע .

ةظحلام ثلاباكلاو،ليصتلا ثلاباك ماخدتسا بجي زاهجلا بيكرت دنع ددرتملا رايتلا ثلاثحمو
ةيلا .قيرح وأ لطع ثوذحيف ببستي يرخأ ثلاثحمو ثلاباك يأ ماخدتسا نأ .
جتنملا عمكلذ اهريفدتب
ثلاباكلا ماخدتسا رظحي امك نوناق دامتعالا تسهجلأ CSAو أ UL
لبق هم ةذمتعم
لبق هم ةيلا ثاجتنملا ريغ يرخأ تسهجأ يلأ Supermicro
ةلاح لمحتيلا (UL/CSA)

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을 금지합니다.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

Notes

Chapter 3

Chassis Components

1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

2 Components

Chassis

The SCF418 chassis is available in a variety of configurations. For more information, visit our Web site at: http://www.supermicro.com.

Backplane

Some SCF418 chassis models come equipped with a SAS-F418-B6 backplane. For more information regarding compatible backplanes, visit the Supermicro web site at http://www.supermicro.com.

Fans

The SCF418 chassis supports system fans. System fans for the SCF418 chassis are powered from the motherboards or the backplane. When one of the motherboard nodes is removed, another motherboard will continue to operate the fans.

Mounting Rails

The SCF418 includes a set of rails, and can be placed in a rack for secure storage and use. To setup your rack, follow the step-by-step instructions included in this manual.

Power Supply

Each SCF418 chassis model includes a high-efficiency 94%+ Plus Platinum Level power supply, rated at 1620 Watts. In the unlikely event your power supply fails, replacement is simple and can be accomplished without tools.

Air Shroud

The SCF418 chassis requires air shrouds for each node to direct the airflow where cooling is needed. The air shroud will differ for different motherboards. If using a motherboard which is not the default in the chassis, refer to the optional parts in the Appendix of this manual, or the Supermicro web site at www.supermicro.com to puchase the proper air shroud.

3-3 Where to get Replacement Components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/ System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Reseller can be found at: http://www.supermicro.com. Click the Where to Buy link.

Chapter 4

System Interface

4-1 Overview

There are several LEDs on the control panel and on the drive carriers to keep you constantly informed of the overall status of the system. SCF418 models with rear I/O (left image below) include four control panels on the handles of the chassis which control each of the nodes. SCF418 chassis with front I/O (right image below) have a power button LED and a UID indicator, with additional LED indicators directly on the motherboard.

This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

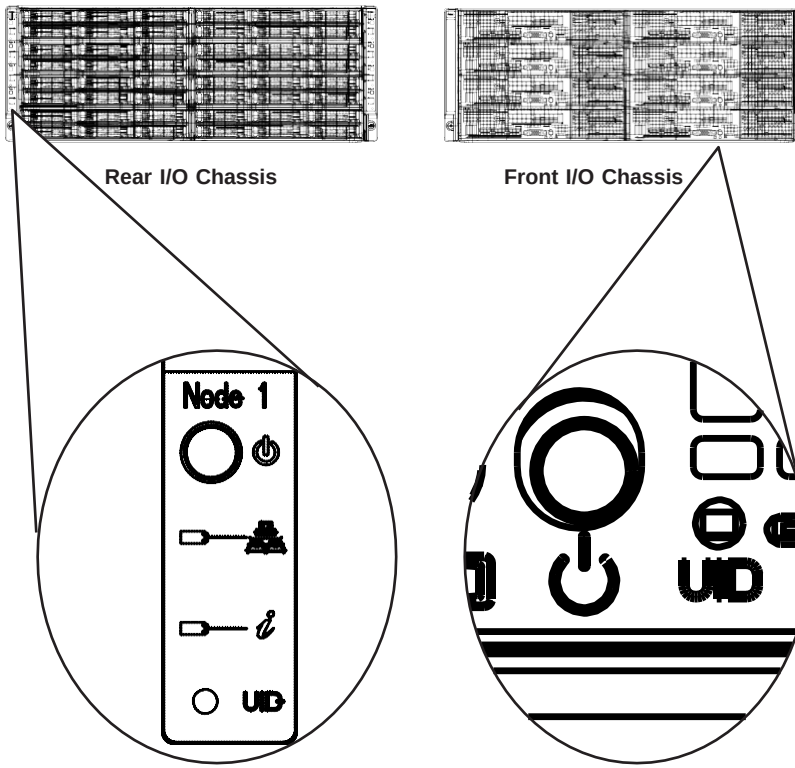

Figure 4-1: Chassis Control Panel

4-2 Control Panel Buttons

- Power: The main power button on each of the four control panels is used to apply or remove power from the power supply to each of the four systems in the chassis. Turning off system power with this but- ton removes the main power, but keeps standby power supplied to the system. Therefore, you must unplug system before servicing. The poer button has a built-in LED which will turn green when the power is on.

- UID: When used with a UID compatible motherboard, the UID indicator is used to turn on or off the blue light function of the LED. This is built into the front side of the UID button and at the rear end of each motherboard node, for those motherboards which support it. Once the blue light is activated, the unit can be easily located in very large racks and server banks.

4-3 Control Panel LEDs

The four control panels are located on the front handle of the SCF418 chassis. Each control panel has two additional LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Informational LED:**

  Continuously on and blue: UID function has been activated.
  Flashing red: Fan failure.
  Continuously on and red: Overheat condition. This may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat or fan failure condition exists.

- NIC: Indicates network activity on either LAN1 or LAN2 when flashing.

4 Drive Carrier LEDs

The SCF418 chassis uses SAS/SATA drives.

SAS/SATA Drives

Each SAS/SATA drive carrier has two LEDs.

- Blue: Each Serial ATA drive carrier has a blue LED. When illuminated, this blue LED (on the front of the SATA drive carrier) indicates drive activity. A connection to the SATA backplane enables this LED to blink on and off when that particular drive is being accessed.

- Red: The red LED illuminates to indicate a SAS/SATA drive failure. If one of the SAS/SATA drives fail, you should be notified by your system management software.

SCSI Drives

This chassis does not support SCSI drives.

Notes

Chapter 5

Chassis Setup and Maintenance

1 Overview

This chapter covers the steps required to install components and perform maintenance on the chassis. The only tool you will need to install components and perform maintenance is a Phillips head screwdriver.

Read the safety warnings and installation instructions in Chapter 2 Standardized Warning Statements for AC Systems before performing setup or maintenance procedures.

2 Removing Power Cords

Before performing any setup or maintenance on the chassis, use the following procedure to ensure that power has been removed disconnected from the system.

Removing the Power Cord

1. Use the operating system to power down the system, following the on-screen prompts.

2. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply.

3. If your system has dual redundant power supplies, remove the cords from both power supplies.

4. Disconnect the cord from the power strip or wall outlet.

5-3 Node Locations

The SCF418 chassis contains eight individual motherboards in separate nodes. The nodes are available in a variety of configurations with 2.5" hard drives, 3.5" hard drives or both. See the following page for your specific SCF418 model to determine the hard drive configuration in your chassis nodes.

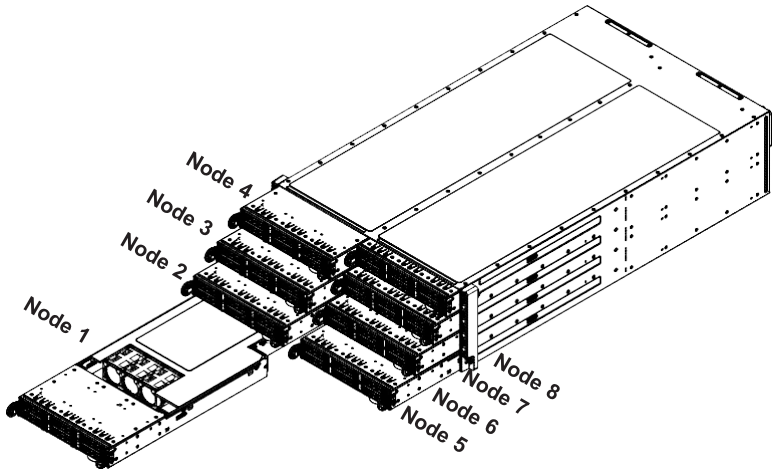

Figure 5-1: Node Locations in the SCF418 Chassis
(Your chassis may differ slightly from the one shown in this illustration)

4 Removing Nodes from the Chassis

Each of the eight individual nodes may be removed from the chassis. Note that when a node is removed from the chassis, the hard drives located in the node will shut-down.

Removing a Node

1. Power down the system and remove the power cords from the rear of the node as described in Section 5-2.

2. Grasp the node by the handles on either side of the front of the node.

3. Carefully pull the node forward and out of the chassis.

5 Removing the Cover from the Node

Removing the Node Cover

1. Remove the power cord from the node as described in Section 5-2 and remove the node from the chassis as described in Section 5-4.

2. Remove the two screws on either side of the rear of the node.

3. Lift the cover up and off the node.

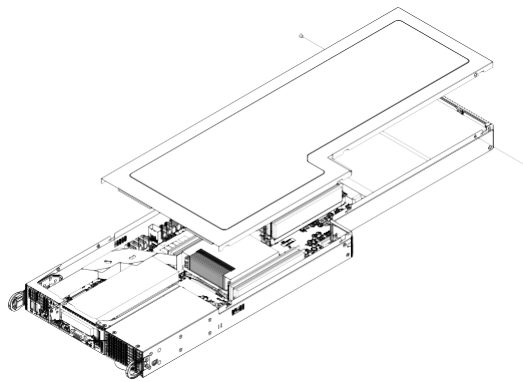

Figure 5-2: Removing the Node Cover
(Your node may differ slightly from the one shown in this illustration)

5-6 Node Configurations

Overview of the Node

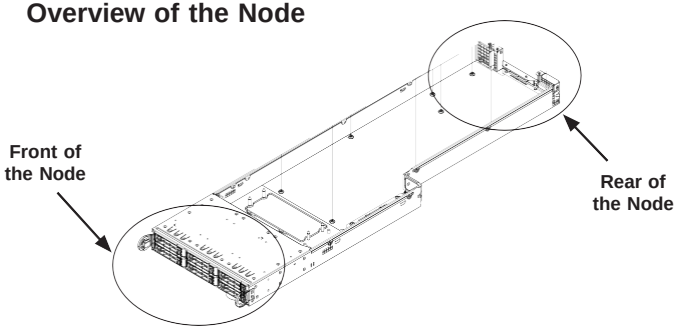

Figure 5-3: Front and Rear of the Node
(Your node may differ from the one shown in this illustration)

SCF418BC-R1K62BP Node Layout

SCF418BC-R1K62BP	
Front of Node	**Rear of Node**
Six 2.5" hot-swappable hard drives	One Micro LP expansion card One low-profile expansion card

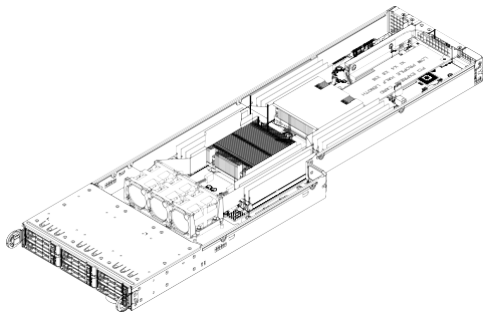

Figure 5-4 SCF418BC-R1K62BP Node

SCF418IF-R1K62BP Node Layout

SCF418IF-R1K62BP	
Front of Node	**Rear of Node**
Two low-profile expansion cards	Two fixed 3.5" hard drives

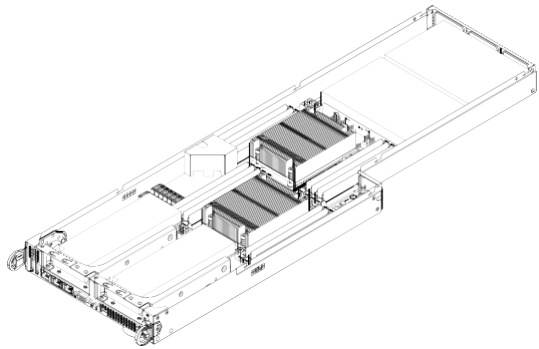

Figure 5-5: SCF418IFL-R1K62BP Node

SCF418IL-R1K62BP Node Layout

SCF418IL-R1K62BP	
Front of Node	**Rear of Node**
One low-profile expansion card	Two fixed 3.5" hard drives

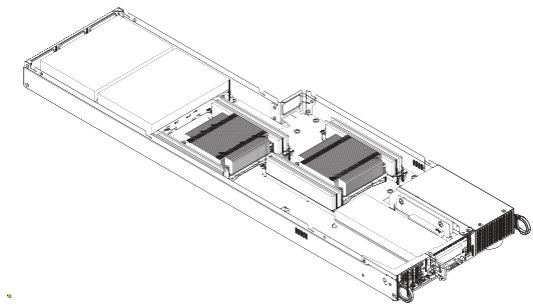

Figure 5-6: SCF418IL-R1K62BP Node

5-7 Nodes and Associated Hard Drives

The SCF418 chassis contains eight individual motherboards in separate 1U nodes. Each node controls the hard drives contained within that node. Note that if a node is pulled out of the chassis, the hard drives associated with that node will power down as well. Refer to the charts below and on the following pages for your specific chassis configuration

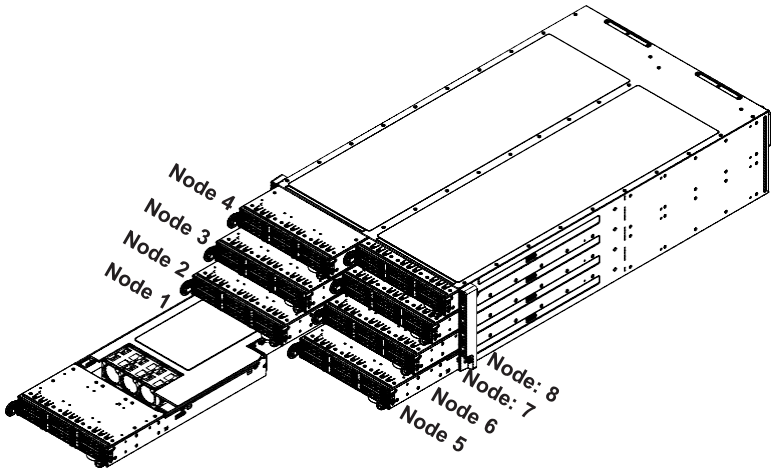

Figure 5-7: Hard Drives and the Corresponding Motherboards

SCF418BC-R1K62BP	
Node 4 Controls six 2.5" HDDs, D1-D6	Node 8 Controls six 2.5" HDDs, H1-H6
Node 3 Controls six 2.5" HDDs, C1-C6	Node 7 Controls six 2.5" HDDs, G1-G6
Node 2 Controls six 2.5" HDDs, B1-B6	Node 6 Controls six 2.5" HDDs, F1-F6
Node 1 Controls six 2.5" HDDs, A1-A6	Node 5 Controls six 2.5" HDDs, E1-E6

SCF418IL-R1K62BP	
Node 4 Controls two fixed 3.5" HDDs D1-D2	Node 8 Controls two fixed 3.5" HDDs H1-H2
Node 3 Controls two fixed 3.5" HDDs C1-C2	Node 7 Controls two fixed 3.5" HDDs G1-G2
Node 2 Controls two fixed 3.5" HDDs B1-B2	Node 6 Controls two fixed 3.5" HDDs, F1-F2
Node 1 Controls two fixed 3.5" HDDs A1-A2	Node 5 Controls two fixed 3.5" HDDs E1-E2

SCF418IF-R1K62BP	
Node 4 Controls two fixed 3.5" HDDs D1-D2	Node 8 Controls two fixed 3.5" HDDs H1-H2
Node 3 Controls two fixed 3.5" HDDs C1-C2	Node 7 Controls two fixed 3.5" HDDs G1-G2
Node 2 Controls two fixed 3.5" HDDs B1-B2	Node 6 Controls two fixed 3.5" HDDs, F1-F2
Node 1 Controls two fixed 3.5" HDDs A1-A2	Node 5 Controls two fixed 3.5" HDDs E1-E2

5-8 Installing and Removing Hard Drives

Note that if a node is pulled out of the chassis, the hard drives associated with that node will power down as well. 2.5" hard drives are hot-swappable and may be removed from the node without removing the node from the chassis or powering down the system.

Only enterprise level hard drives are recommended for use in Supermicro chassis.

Installing and Removing 2.5" Hard Drives

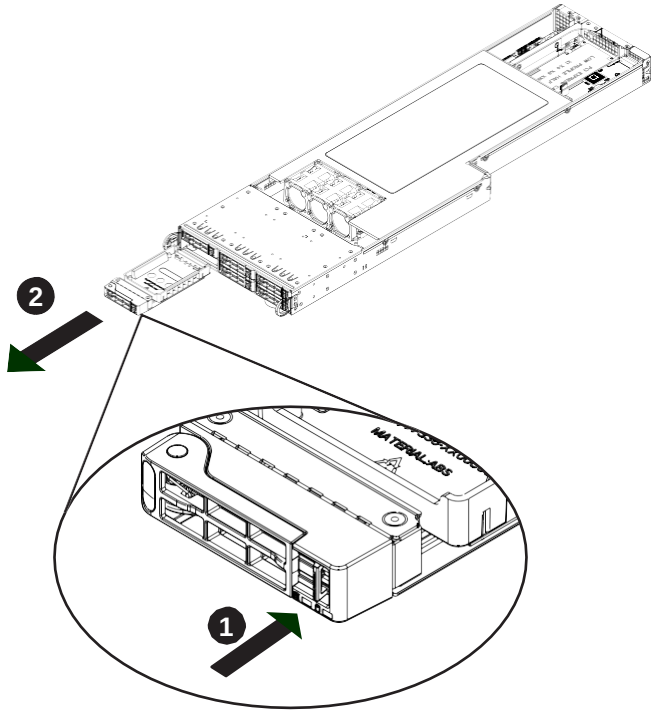

Figure 5-8: Removing a 2.5" Hard Drive Carrier
(Your node may differ slightly from the one shown in this illustration)

Removing 2.5" Hard Drive Carriers from the Node

1. Press the release button on the drive carrier. This extends the drive bay handle.

2. Use the handle to pull the drive carrier out of the chassis.

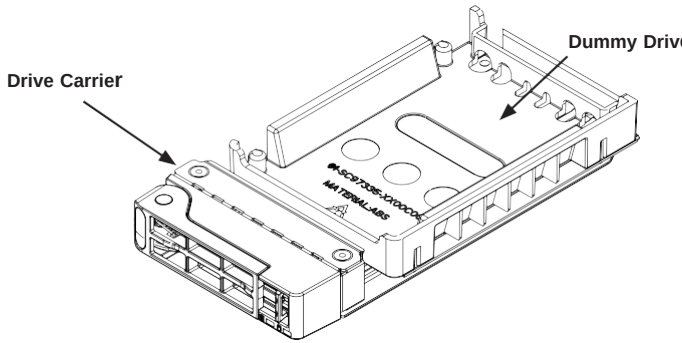

Figure 5-9: 2.5" Hard Drive Carrier

The 2.5" hard drives are mounted in the drive carrier to simplify their installation and removal from the chassis. These carriers also help promote proper airflow for the drive bays.

Warning: Except for short periods of time while swapping hard drives, do not oper- ate the server with the hard drives bays empty.

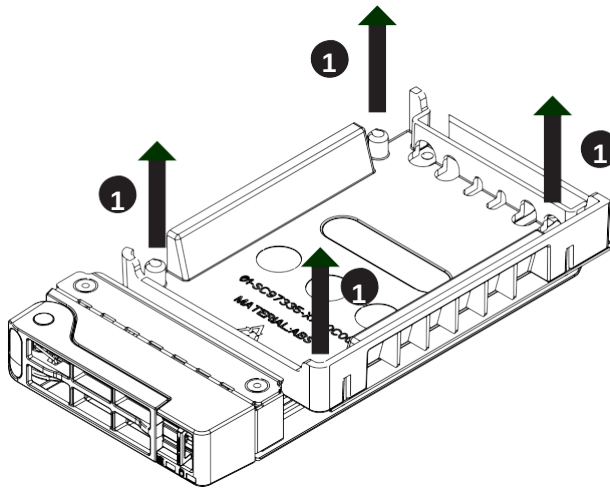

Figure 5-10: Removing the Dummy Drive from the 2.5" Drive Carrier

Installing a 2.5" Drive into the Hard Drive Carrier

1. Remove the two screws holding the drive to the carrier.

2. Remove the drive from the carrier.

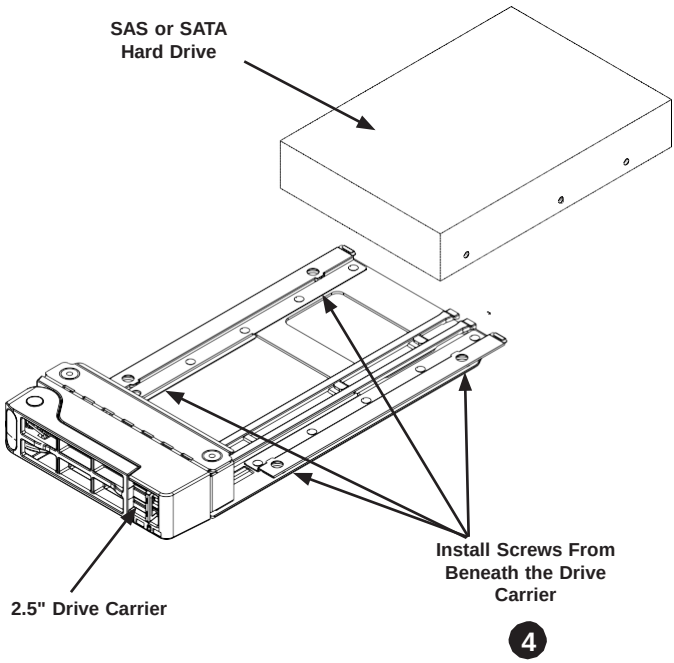

Figure 5-11: Installing a 2.5" Hard Drive in the Drive Carrier

3. Install a new drive into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.

4. Secure the hard drive by tightening all four screws.

5. Use the open handle to replace the drive carrier into the chassis. Make sure to close the drive carrier handle.

Installing and Removing 3.5" Fixed Hard Drives

Removing 3.5" Fixed Hard Drives from the Node

1. Power down the system and remove the power cords from the rear of the power supplies as described in Section 5-2. Remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Remove the screw securing the 3.5" hard drive tray to the floor of the chassis.

3. Lift the hard drive and tray up and out of the chassis.

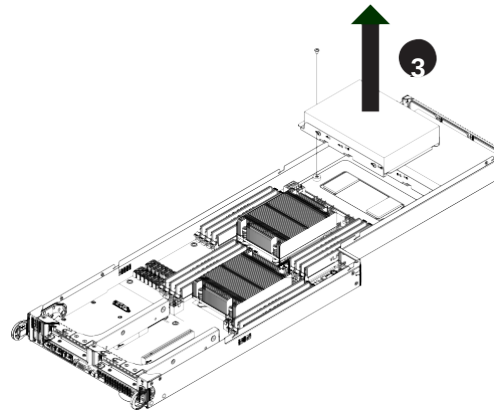

Figure 5-12: Removing a 3.5" Fixed Hard Drive from the Node

4. Remove the screws securing the hard drive to the tray and set them aside for later use.

5. Lift the hard drive up and out of the tray.

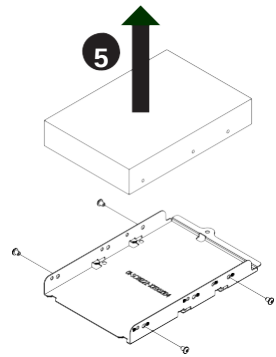

Figure 5-13: Installing a 3.5" Hard Drive in the Drive Carrier

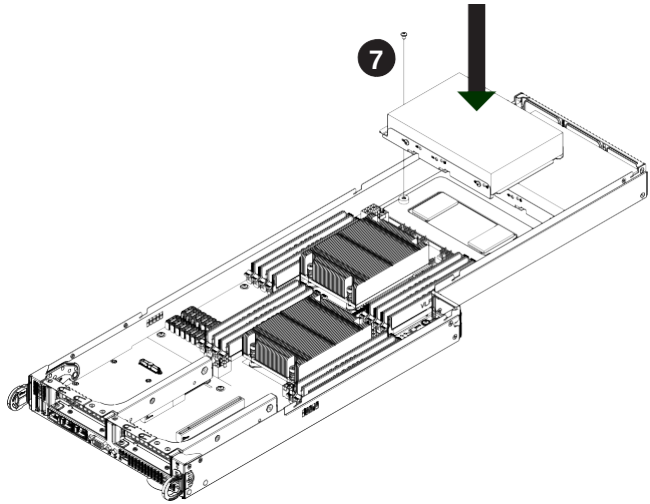

Figure 5-14: Installing a 3.5" Fixed Hard Drive in the Node

6. Install a replacement drive into the hard drive tray and secure it to the tray with the screws previously set aside.

7. Secure the hard drive tray to the floor of the node with the screw previously set aside.

8. Replace the node cover, return the node to its bay in the chassis, plug the power cord into the rear of the power supply and power up the system.

9 Removing and Installing the Backplane

The SCF418 chassis backplane is located behind the hard drives and in front of the front system fans in each node. Although backplane failure rarely occurs, in the event of a backplane failure, follow the instructions below.

Removing the Backplane

Removing the Backplane from the Chassis

1. Power down the system and remove the power cords from the rear of the power supplies as described in Section 5-2. Remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Remove the node cover and air shroud.

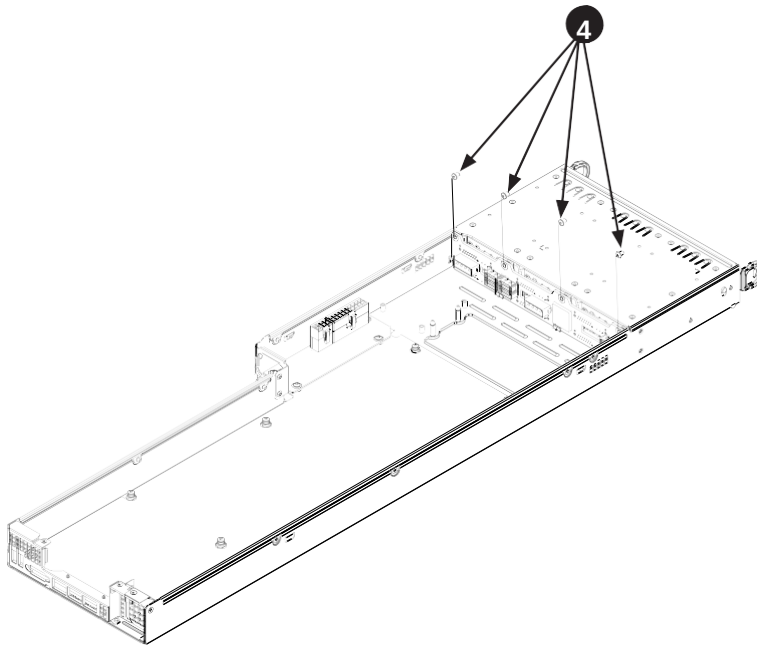

Figure 5-15: Removing the Screws at the Top of the Backplane (Your node may differ slightly from the one shown in this illustration)

3. Remove the four screws securing the backplane to the node.

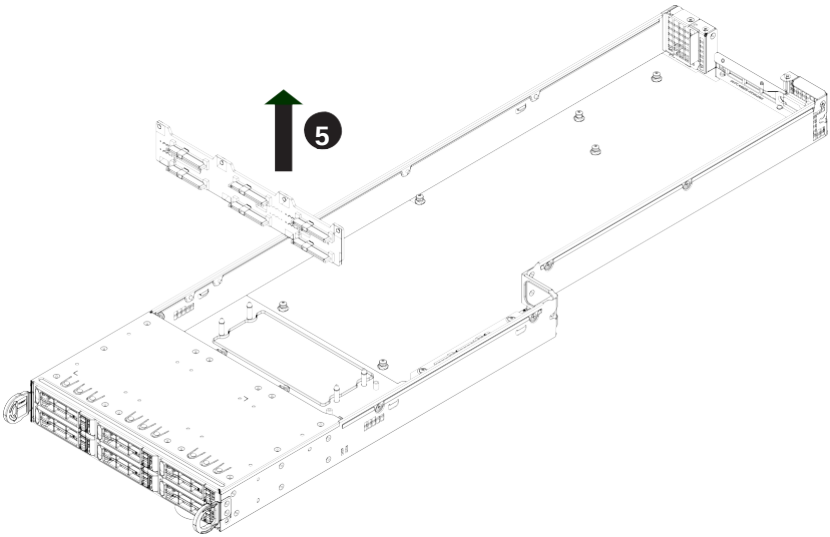

Figure 5-16: Removing the Backplane from the Node
(Your node may differ slightly from the one shown in this illustration)

4. Lift the backplane up and out of the node.

Installing the Backplane

Installing the Backplane into the Chassis

1. Ensure that all of the hard drive carriers have been removed from the bays in the front of the node (See 5-8 Installing and Removing Hard Drives).

2. Ease the backplane forward, against the front of the chassis.

3. Align the mounting holes in the backplane with the holes in the chassis. Replace the four screws at the top of the backplane

4. Reconnect all cables and return the hard drive trays to their bays in the front of the node.

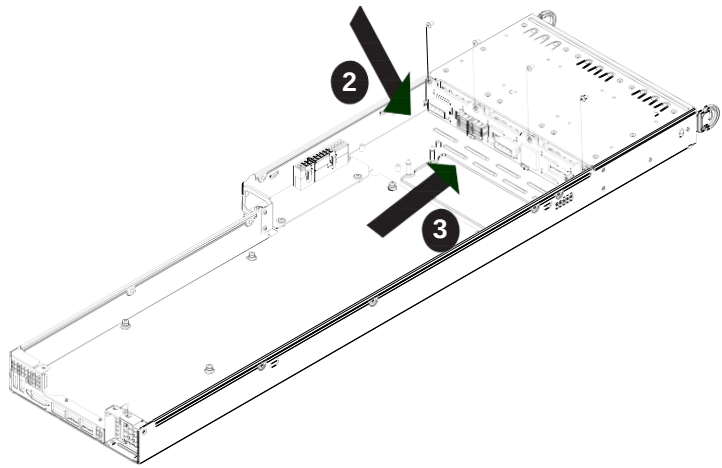

Figure 5-17: Installing the Backplane
(Your node may differ slightly from the one shown in this illustration)

5-10 Installing the Motherboard

Compatible Motherboards

For the most up-to-date information on compatible motherboards and other parts, visit the Supermicro Web site at www.supermicro.com.

Permanent and Optional Standoffs

Standoffs prevent short circuits by creating space between the motherboard and the floor of the node. The SCF418 chassis includes permanent standoffs in locations used by most motherboards. These standoffs use the rounded Phillips head screws included in the SCF418 accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or non-standard security. Optional standoffs are used for these motherboards.

To use an optional standoff, compare the mounting holes in the motherboard with those in the floor of the node. Then place a screw through the bottom the node and secure the screw with a hexagonal nut (rounded side up).

Depending upon the configuration of the motherboard being used, it is also possible that some of the optional standoffs which are pre-installed in the chassis, may need to be removed. Add or remove standoffs as needed.

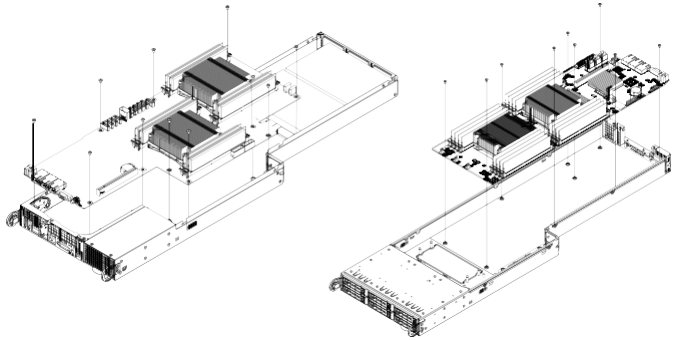

Figure 5-18: Installing the Motherboard in the Node Tray
(Your node may differ slightly from the one shown in this illustration)

Installing the Motherboard

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, cautions, and cable connections.

2. Remove the node from the chassis as described in Section 5-2, remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

3. Compare the holes in the motherboard to those in the node. Add or remove standoffs as necessary.

4. Lay the motherboard in the node, aligning the standoffs with the motherboard.

5. Secure the motherboard to the floor of the node tray using the rounded, Phillips head screws included for this purpose. Do not exceed eight pounds of torque when tightening down the motherboard.

6. Install the expansion card associated with the motherboard if the chassis is a hot-swappable version. Refer to the next section for instructions on installing the expansion card

7. Secure the CPU(s), heatsinks, and other components to the motherboard as described in the motherboard documentation. Do not exceed eight pounds of torque when tightening down the motherboard.

8. Connect the cables between the motherboard, backplane, chassis, front panel, and power supply, as needed. The fans may be temporarily removed to allow access to the backplane ports.

9. Replace the expansion card bracket and secure the bracket with a screw.

5-11 Installing Expansion Cards

SCF418 PCIE Slot Configurations

Some SCF418 chassis models support one or more expansion cards in each node, Refer to the tables below to determine the PCIE slot configuration for your particular chassis.

SCF418BC-R1K62BP	
Front of Node	**Rear of Node**
Eight 2.5" hot-swappable hard drives	One Micro LP expansion card One low-profile expansion card

SCF418IF-R1K62BP	
Front of Node	**Rear of Node**
Two low-profile expansion cards	Two fixed 3.5" hard drives

SCF418IL-R1K62BP	
Front of Node	**Rear of Node**
One low-profile expansion card	Two fixed 3.5" hard drives

Installing Rear Low-profile Expansion Cards

The following instructions are for chassis nodes in which the expansion cards are mounted in the rear of the node.

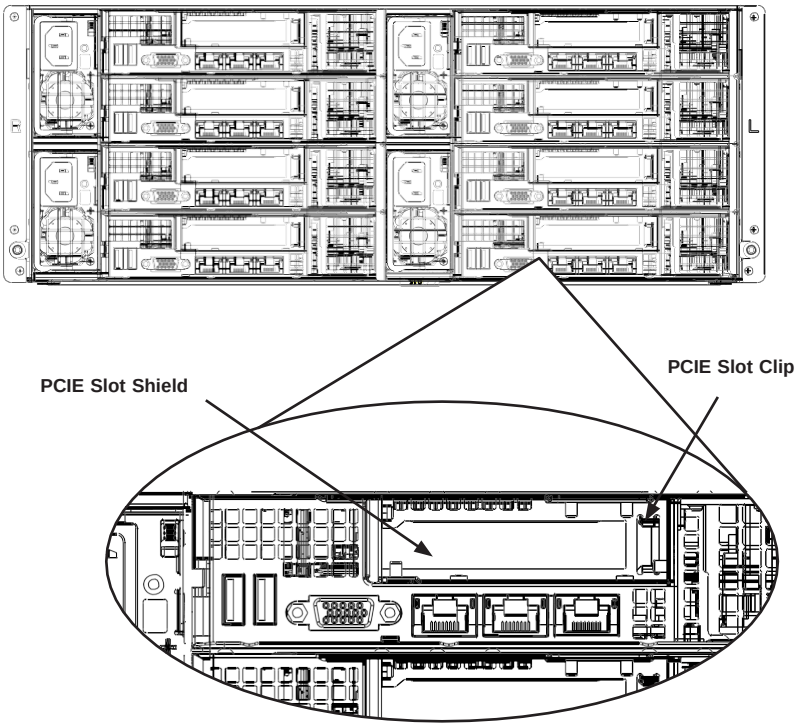

Figure 5-19: I/O Shield Configuration

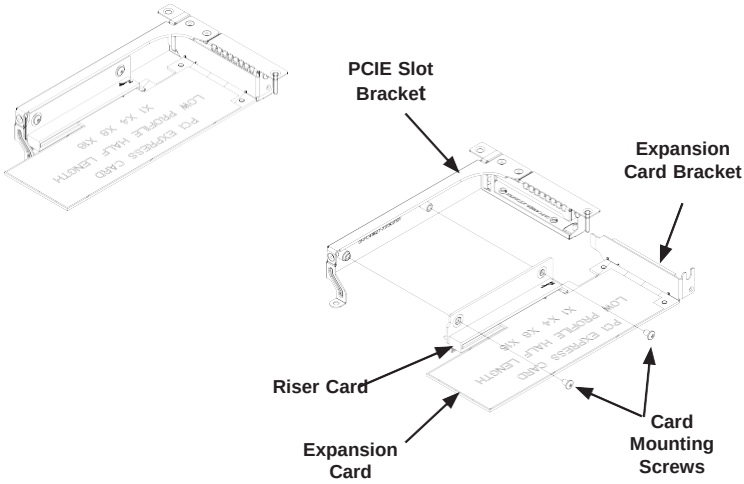

Figure 5-20: Assembling the PCIE Slot Bracket and Cards

Assembling the PCIE Slot Bracket Assembly

Each node supports one expansion card. This expansion card must be plugged into a riser card, which in turn plugs into the motherboard.

Assembling the PCIE Slot Bracket Assembly

1. Remove the node from the chassis as described in Section 5-2, remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Open the PCIE slot clip and remove the PCIE slot shield. (See the illustration on the previous page)

3. Remove the three mounting screws securing the PCIE slot bracket to the node.

4. Lift the PCIE slot bracket out of the node.

5. Insert the expansion card into the riser card.

6. Secure the riser card to the PCIE slot bracket using the two screws included in the accessory box.

7. Insert the expansion card bracket into the PCIE slot bracket

8. Secure the expansion card bracket ot the PCIE slot bracket using two screws as illustrated.

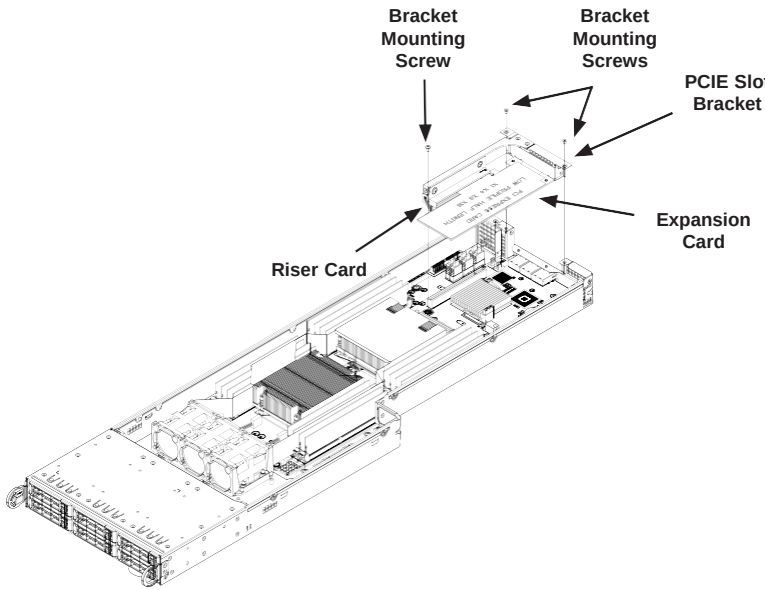

Figure 5-21: Installing the PCIE Slot Bracket Assembly
(Your node may differ slightly from the one shown in this illustration)

Installing the PCIE Slot Bracket Assembly Into the Node

Installing the PCIE Slot Bracket Assembly

1. Remove the PCIE slot cover and assemble the PCIE slot bracket assembly as described on the previous page.

2. Simultaneously place the expansion card into the rear window of the node and plug the riser card into the slot on the motherboard.

3. Secure the PCIE slot bracket assembly to the node with three bracket mounting screws.

Installing Rear Micro LP Cards

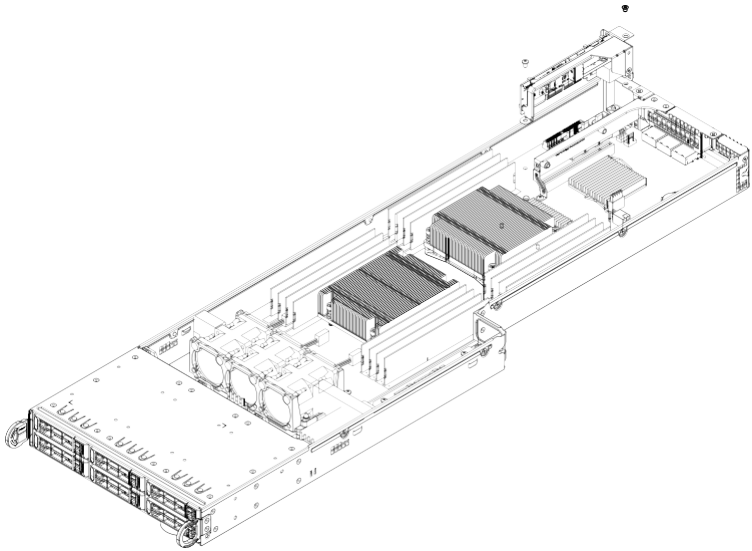

Figure 5-22: Installing the Micro LP Card
(Your node may differ slightly from the one shown in this illustration)

Installing the Micro LP Assembly Into the Node

Installing the Micro LP Card Assembly

1. Remove the screw securing the slot cover to the chassis and set the screw aside for later use.

2. Simultaneously place the Micro LP card into the rear window of the node and plug the card into the slot on the motherboard.

3. Secure the Micro LP assembly to the node with two bracket mounting screws.

Installing Front Low-profile Expansion Cards

The following instructions are for chassis nodes in which the expansion cards are mounted in the front of the node.

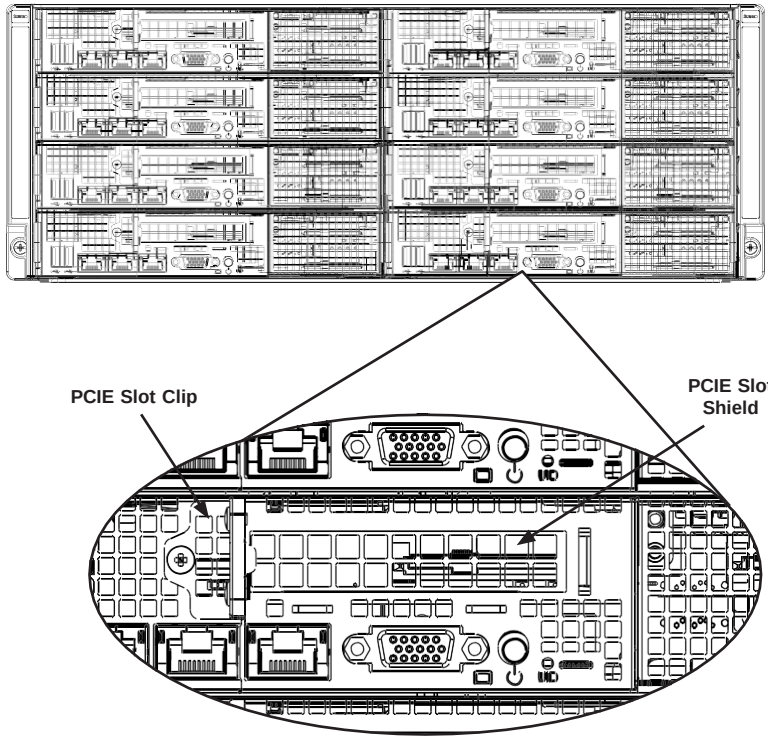

Figure 5-23: PCIE Slot Configuration
(Your chassis and nodes may differ from those shown in this illustration)

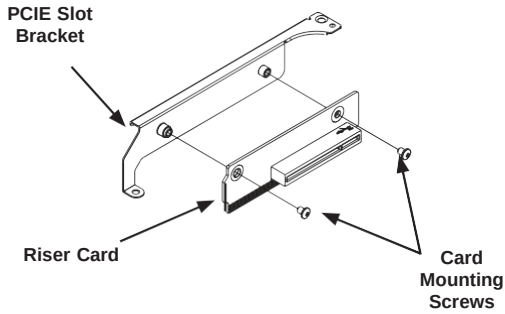

Figure 5-24: Assembling the PCIE Slot Bracket and Riser Card

Assembling the PCIE Slot Bracket Assembly

Each node supports one expansion card. This expansion card must be plugged into a riser card, which in turn plugs into the motherboard.

Assembling the PCIE Slot Bracket Assembly

1. Remove the node from the chassis as described in Section 5-2, remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Open the PCIE slot clip and remove the PCIE slot shield. (See the illustration on the previous page)

3. Remove the three mounting screws securing the PCIE slot bracket to the node.

4. Lift the PCIE slot bracket out of the node.

5. Secure the riser card to the PCIE slot bracket using the two screws included in the accessory box.

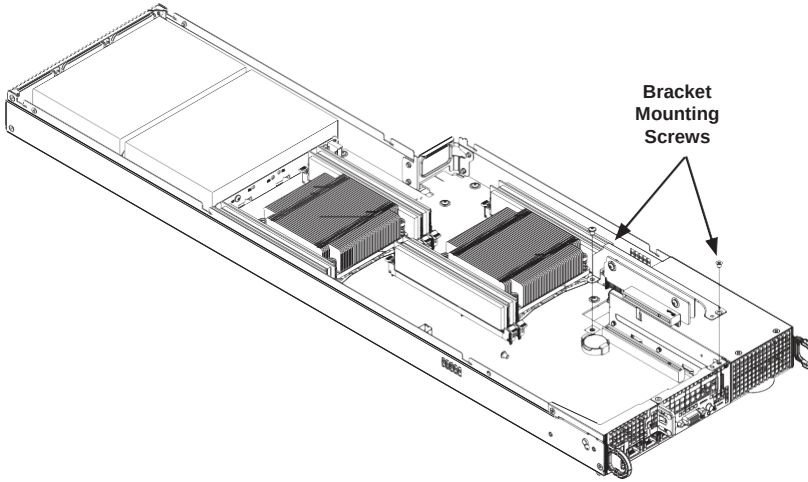

Figure 5-25: Installing the Riser Card and Bracket
(Your node may differ slightly from the one shown in this illustration)

6. Insert the riser card into the appropriate slot on the motherboard.

7. Simultaneously insert the expansion card into the riser card, while sliding the expansion card bracket into the open PCIE slot.

8. Secure the expansion card bracket ot the PCIE slot bracket using two screws as illustrated.

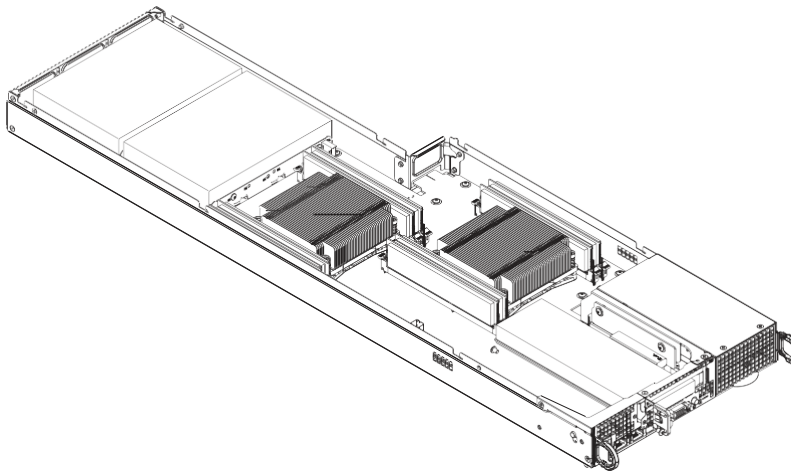

Figure 5-26: Installing the Expansion Card
(Your node may differ slightly from the one shown in this illustration)

5-12 Installing Air Shrouds

Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. The SCF418 and SCF418L chassis require an air shroud in each node.

Installing an Air Shroud

1. Power down the system and remove the power cords from the rear of the power supplies as described in Section 5-2. Remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Make sure that the motherboard and all components are properly installed in each node.

3. Place the air shroud over the motherboard, as illustrated below. The air shroud sits behind the system fans and goes over the top of the motherboard and its components.

4. Repeat the procedure for the remaining three nodes.

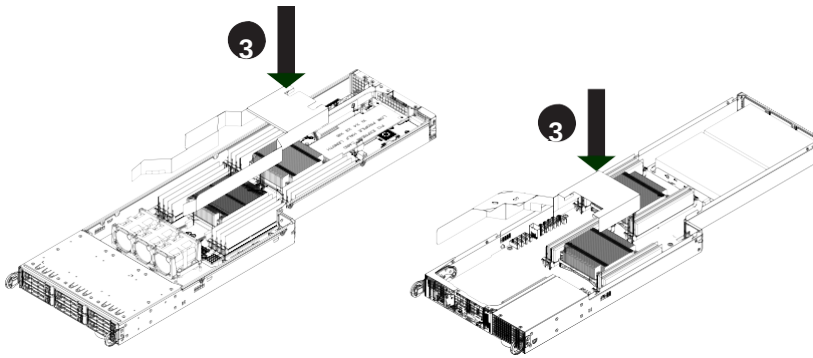

Figure 5-27: Installing the Air Shroud
(Your node may differ from those shown in this illustration)

5-13 Removing and Installing System Fans

Removing and Installing Internal System Fans

Removing Internal System Fans

1. Power down the system and remove the power cords from the rear of the power supplies as described in Section 5-2. Remove the node from the chassis as described in Section 5-4 and remove the cover from the node as described in Section 5-5.

2. Disconnect the wiring to all three fans.

3. Remove the four screws securing the fan tray to the floor of the node and set them aside for future use.

4. Lift the fan tray up and out of the node.

5. Push upward on the underside of the failed fan to remove it from the fan tray.

Installing Internal System Fans

1. Insert the replacement fan into the fan tray, making certain that the fan is facing in the same direction as the other fans in the fan tray.

2. Place the fan tray in the node.

3. Secure the fan tray to the floor of the node with the four screws previously set aside.

4. Reconnect the wiring to the fans.

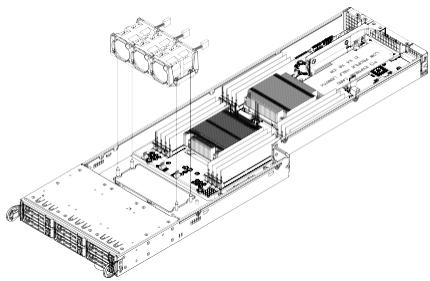

Figure 5-28:
Removing the Fan Tray

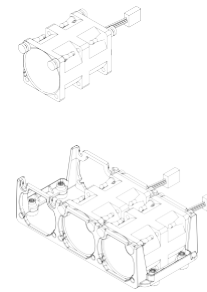

Figure 5-29:
Removing the Fan from the Fan Tray

(Your node may differ slightly from the one shown in this illustration)

Removing and Installing External System Fans

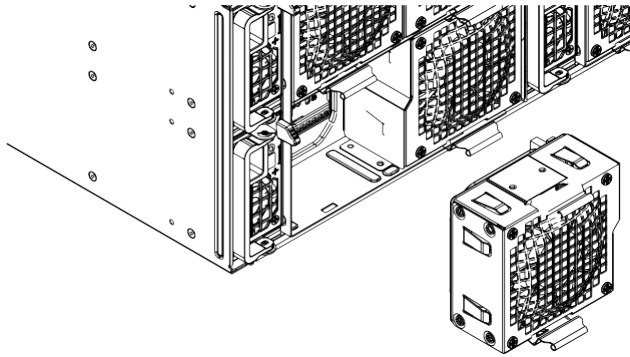

Figure 5-30: Installing the External Fan
(Your node may differ slightly from the one shown in this illustration)

Removing a Rear Exhaust Fan

1. Determine which node contains the failed fan and power down the node with the operating system.

2. Remove the power cord from the rear of the node as described on page 5-2.

3. Press the release tab on the bottom of the fan and pull it away from rear of the node.

Installing a Rear Exhaust Fan

1. Press the release tab on the bottom of the fan and insert it into the open fan bay.

2. Push the fan into the bay until it clicks into the locked position.

5-14 Replacing the Power Supplies

The SCF418 chassis includes redundant 1620W power supplies. These power supplies are auto-switching capable. This enables the power supplies to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Power Supply Replacement

The SCF418 chassis utilizes redundant power supplies. In the unlikely event that the power supply unit needs to be replaced, one power supply can be removed, without powering down the system. Replacement units can be ordered directly from Supermicro (See the contact information in the Preface of this manual).

Changing the Power Supply

1. Disconnect the AC power cord on the back of the failed power supply.
2. Press the release tab on the back of the power supply and pull the power supply out using the handle provided.
3. Push the replacement power supply module into the power bay until it clicks into the locked position.
4. Plug the AC power cord back into the module and power up the node.

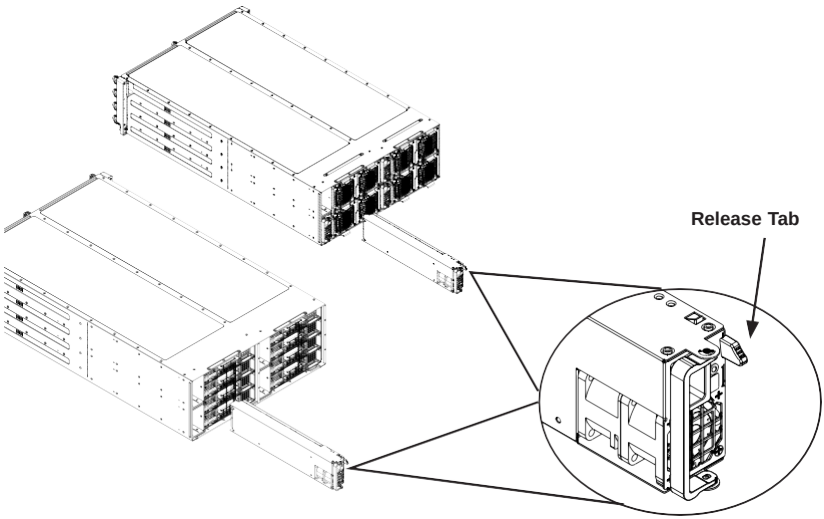

Figure 5-31: Changing the SCF418 and SCF418L Chassis Power Supplies (Your node may differ slightly from the one shown in this illustration)

Notes

Chapter 6

Rack Installation

1 Overview

This chapter provides a quick setup to install the SCF418 chassis into a rack. Following these steps in the order given should enable you to have the system installed within a minimal amount of time.

2 Unpacking the System

You should inspect the box which the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. The system needs to be placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

3 Preparing for Setup

The box your chassis was shipped in should include two sets of rail assemblies and the mounting screws needed for installing the system into the rack. Also included is an optional square hole to round hole converter bracket, for use in racks with round mounting holes. *Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow*.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.
- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and the like).

4 Warnings and Precautions

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installations, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure that the rack is stable before extending a component from the rack.
- You should extend only one component at a time - extending two or more si- multaneously may cause the rack to become unstable.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work upwards.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot-plug hard drives and power supply modules to cool before touching them.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Warning: do not pick up the server by the front handles. They are designed to pull the system from a rack only.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

6-5 Rack Mounting Instructions

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **NOTE:** This rail will fit a rack between 28.5" and 33.5" deep. The SCF418 is not designed for installation into a Telco post-style rack unit.

Identifying the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: A front section that secures to the front post of the rack and a rear section that can be adjusted in length and secures to the rear post of the rack. These assemblies are specifically designed for the left and right side of the chassis.

Adjusting the Rails

Each rail assembly has an adjusting screw. loosening this screw allows you to adjust the length of the rail to fit a variety of rack sizes.

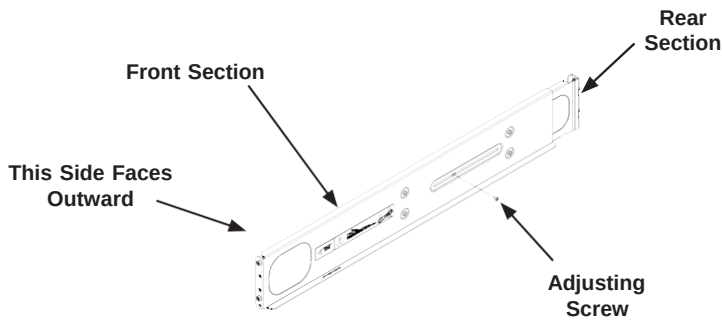

Figure 6-1: Identifying the Outer Rail and Inner Rails (Left Rail Assembly Shown)

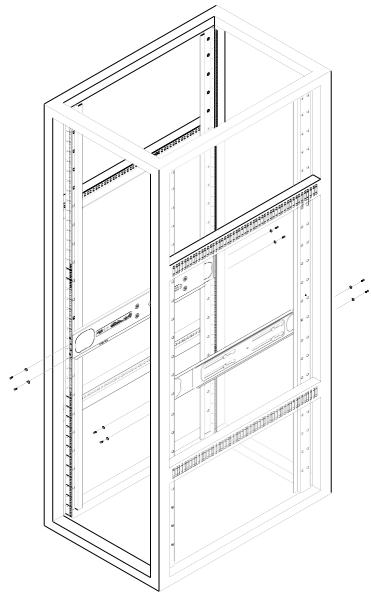

Figure 6-3: Attaching the Rails to a Rack

Note: figures are for illustrative purposes only. Always install servers into racks from the bottom up.

Installing the Rails on a Rack

Installing the Rails

1. Adjust the length of both rails as described on the previous page.

2. Hang the hooks of the front of the outer rail onto the slots on the front of the rack. Secure the front of the outer rail to the rack with two screws.

3. Pull out the rear of the inner rail, adjusting the length until it fits within the posts of the rack.

4. Hang the hooks of the rear portion of the inner rail onto the slots on the rear of the rack. Secure the rear of the outer rail to the rear of the rack with two screws.

5. Repeat steps 1-4 for the remaining rail.

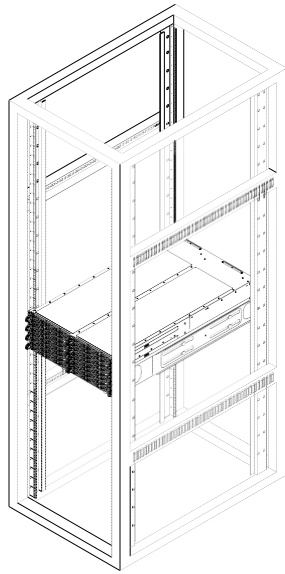

Figure 6-4: Installing into a Rack

Note: figures are for illustrative purposes only. Always install servers into racks from the bottom up.

Chassis Installation

Installing the Chassis into a Rack

1. Confirm that the rails are correctly installed on the rack.
2. Align the bottom of the chassis with the bottom of the rails.
3. Insert the chassis into the rails, keeping the pressure even on both sides, pushing the chassis into the rack until it clicks into the locked position.
4. Secure the chassis handles to the front of the rack.

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

Appendix A

SCF418 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SCF418BC-R1K620BP	
	1620W
MFR Part #	PWS-1K62P-1R
AC Voltage	100 - 240V, 50 - 60Hz, 7.5 Amp max
+5V	18 Amp
+5V standby	3 Amp
+12V	49 Amp
-12V	0.5 Amp
+3.3V	15 Amp

Notes

Appendix B

BPN-SAS-F418-B6 Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

4 Introduction to the BPN-SAS-F418-B6 Backplane

The BPN-SAS-F418-B6 backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS-F418-B6 Revision 1.01, the most current release available at the time of publication. Always refer to the Supermicro web site at http://www.supermicro.com for the latest updates, compatible parts and supported configurations.

B-5 Front Connectors

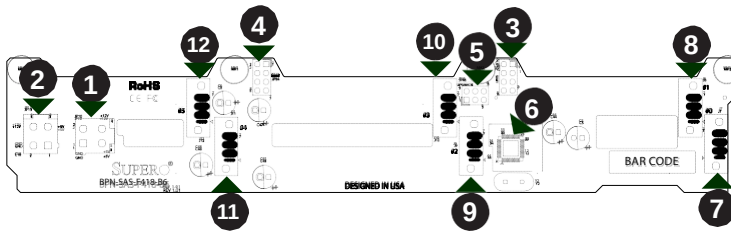

Figure B-1: Front Connectors

1. Main Power Connector (4-Pin): JP10
2. Main Power Connector (4-pin): JP13
3. Sideband Connector #1 (SB#1): JP52
4. Sideband Connector #2 (SB#2): JP54
5. Upgrade Connector: JP46
6. ATMEL Chip
7. SATA Connector #0: J7
8. SATA Connector #1: J8
9. SATA Connector #2: J9
10. SATA Connector #3: J10
11. SATA Connector #4: J11
12. SATA Connector #5: J12

B-6 Front Connector and Pin Definitions

1 - 2 Backplane Main Power Connectors

The 4-pin connectors, designated JP10 and JP13 provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector

Pin#	Definition
1 and 2	Ground
3	+5V
4	+12V

3 - 4 Sideband Connectors

For SES-2 to work properly, an 8-pin sideband cable must be connected to JP52 and JP54. See the table to the right for pin definitions.

Sideband Connector

Pin #	Definition	Pin #	Definition
2	Backplane Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Backplane ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

5 Upgrade Connector

The upgrade connector, designated JP46 is a firmware upgrade port.

6 ATMEL Chip

The ATMEL chip is an enclosure management chip used in the BPN-SAS-F418-B6 backplane.

7 - 11 SATA Connectors #0 - #5

SATA connectors #0 - #5 are used to connect the SATA cables. The six ports are designated #0 - #5 and are compatible with both SAS and SATA drives.

B-7 Rear Connectors and LED Indicators

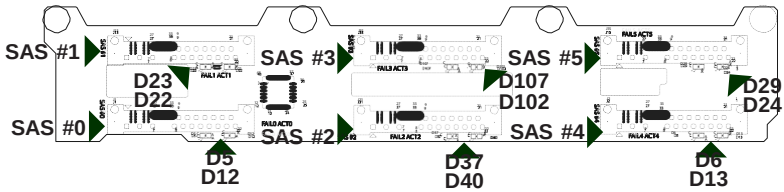

Figure C-B: Rear Connectors and LED Indicators

Rear SAS/SATA Connectors and LED Indicators				
Ports	**SAS/SATA Drive Number**	**Rear Connectors**	**Failure LED Indicator**	**Activity LED Indicator**
SAS#0	SAS/SATA HDD #0	J1	D5	D12
SAS#1	SAS/SATA HDD #1	J13	D23	D22
SAS#2	SAS/SATA HDD #2	J21	D37	D40
SAS#3	SAS/SATA HDD #3	J35	D107	D102
SAS#4	SAS/SATA HDD #4	J2	D6	D13
SAS#5	SAS/SATA HDD #5	J15	D29	D24

Notes

Appendix C

BPN-SAS-F418B2R Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

4 Introduction to the BPN-SAS-F418-B2R Backplane

The BPN-SAS-F418-B2R backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS-F418-B2R Revision 1.01, the most current release available at the time of publication. Always refer to the Supermicro web site at http://www.supermicro.com for the latest updates, compatible parts and supported configurations.

c-5 Front Connectors

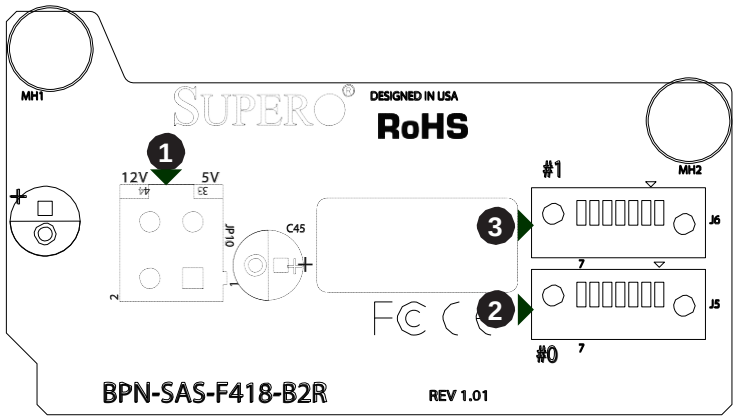

Figure C-1: Front Connectors

1. Main Power Connector (4-pin): JP10
2. SAS Port #0: J5
3. SAS Port #1: J6

C-6 Front Connector and Pin Definitions

1 Backplane Main Power Connector

The 4-pin connector, designated JP10 provides power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector

Pin#	Definition
1 and 2	Ground
3	+5V
4	+12V

2 - 3 SATA Connectors

The SATA connectors #0 - #1 are used to connect the SATA cables. The two ports are designated SAS #0 - SAS #1 and are compatible with both SAS and SATA drives.

C-7 Rear Connectors and LED Indicators

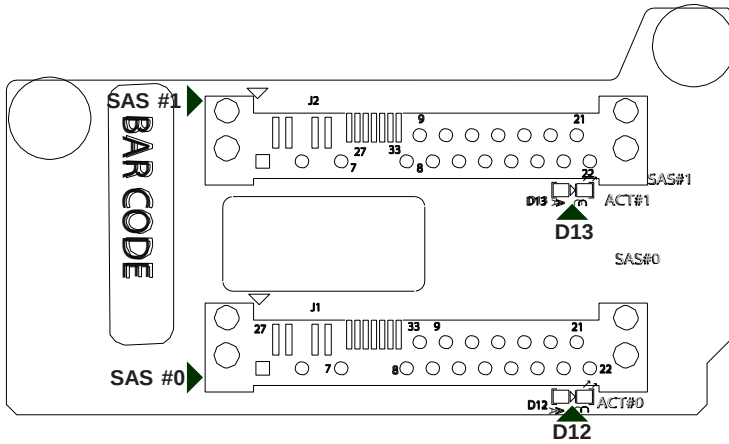

Figure C-2: Rear Connectors and LED Indicators

Rear SAS/SATA Connectors and LED Indicators			
Ports	**SAS/SATA Drive Number**	**Rear Connectors**	**Activity LED Indicator**
SAS#0	SAS/SATA HDD #0	J1	D12
SAS#1	SAS/SATA HDD #1	J2	D13

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